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(54) Title: SYSTEM AND METHOD OF RETRIEVING VOICE MAIL MESSAGES IN A TELECOMMUNICATIONS NETWORK

(57) Abstract: A system and method of retrieving voice mail messages from a primary VMS (13) and at least one secondary VMS (17) with a single phone call from a subscriber. A telephone number for the secondary VMS is stored in a subscriber profile (18) in the primary VMS. After the subscriber calls the primary VMS and retrieves messages stored in the primary VMS, the subscriber is presented with an options menu (25) and selects to divert (26) to the secondary VMS. The primary VMS retrieves (27) the stored telephone number for the secondary VMS, automatically seizes (28) an outside telephone line, and auto-dials the telephone number for the secondary VMS. The secondary VMS provides a menu of options (29) to the subscriber. The secondary VMS then receives a subscriber selection (30) to listen to messages, and plays messages (31) stored in the secondary VMS for the subscriber in response to the subscriber selection. If more than one secondary VMS is defined (35) in the subscriber profile, the primary VMS sequentially calls (37) each of the secondary VMSs for retrieval of messages stored therein.

## SYSTEM AND METHOD OF RETRIEVING VOICE MAIL MESSAGES IN A TELECOMMUNICATIONS NETWORK

### BACKGROUND OF THE INVENTION

5           Technical Field of the Invention

This invention relates to telecommunication systems and, more particularly, to a system and method in a telecommunications network for retrieving voice mail messages from a primary voice mail system (VMS) and at least one secondary VMS with a single phone call.

10           Description of Related Art

When a mobile subscriber is traveling away from his office, and desires to check for voice mail messages, he currently has to check different voice mail boxes for different phones. For example, he may have to check one voice mail box for his office phone, and one for his mobile phone. This can be a troublesome and time-consuming evolution.

One existing method of overcoming this problem is, for example, to forward the subscriber's office phone to his mobile phone. This solution, however, has several disadvantages and shortcomings. First, the subscriber has to remember to activate call forwarding whenever he leaves his office. If he forgets to do so, his calls are not forwarded, and he will have to check both voice mail boxes once again. Second, he has to remember while traveling whether or not he remembered to activate call forwarding. Once he is traveling, he may not be able to tell if office calls are being forwarded, and he may choose to check both voice mail boxes to make sure. Third, forwarding his office phone to his mobile phone does not ensure that all voice mail messages are forwarded. For example, another subscriber using the office voice mail system may forward a voice mail message to his office voice mail box through the voice mail system itself rather than through a call to his office phone. Such a message would not be forwarded to his mobile phone even if call forwarding was activated.

In order to overcome the disadvantages and shortcomings of the existing solution, it would be advantageous to have a system and method of activating at least

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one secondary voice mail box that enables a subscriber to check voice mail boxes for multiple phones such as his office phone and his mobile phone with a single call. The present invention provides such a system and method.

## 5 SUMMARY OF THE INVENTION

In one aspect, the present invention is a method in a telecommunications network of retrieving voice mail messages from a primary voice mail system (VMS) and a secondary VMS with a single message-retrieving phone call from a subscriber. The method includes the steps of receiving the phone call from the subscriber in the  
10 primary VMS, playing messages stored in the primary VMS for the subscriber, automatically forwarding the call to the secondary VMS, and playing messages stored in the secondary VMS for the subscriber. The subscriber may define and access multiple "secondary mailboxes".

In more detail, the method includes the steps of storing a telephone number for  
15 each secondary VMS in a subscriber database in the primary VMS, receiving the phone call from the subscriber in the primary VMS, and providing by the primary VMS, a menu of options to the subscriber. This is followed by receiving by the primary VMS, a subscriber selection to listen to messages, and playing messages stored in the primary VMS for the subscriber in response to the subscriber selection.  
20 If the subscriber then selects to divert to a secondary VMS, the primary VMS retrieves the stored telephone number for the first defined secondary VMS, automatically seizes an outside telephone line, and dials the telephone number for the secondary VMS. The call from the primary VMS is received in the secondary VMS which then provides a menu of options to the subscriber. The secondary VMS then receives a subscriber  
25 selection to listen to messages, and plays messages stored in the secondary VMS for the subscriber in response to the subscriber selection. When all messages have been retrieved from the secondary VMS, the primary VMS retrieves the stored telephone number for the next defined secondary VMS and repeats the process until all defined secondary VMSs have been called.

30 In another aspect, the present invention is a system in a telecommunications network for retrieving voice mail messages from a primary VMS and a secondary

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VMS with a single message-retrieving phone call from a subscriber. The primary VMS includes a database of information for the subscriber which includes a telephone number for the secondary VMS. The primary VMS also includes a menu generator for offering options to the subscriber and receiving subscriber selections, and a message playback unit for playing messages stored in the primary VMS for the subscriber in response to the subscriber selecting to listen to messages. Finally, the primary VMS includes an auto-dialer for automatically seizing an outside telephone line and dialing the telephone number for the secondary VMS in response to the subscriber selecting to divert to the secondary VMS. The secondary VMS includes means for playing messages stored in the secondary VMS for the subscriber upon receiving the call from the primary VMS.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

The invention will be better understood and its numerous objects and advantages will become more apparent to those skilled in the art by reference to the following drawings, in conjunction with the accompanying specification, in which:

FIG. 1 is a simplified block diagram of the preferred embodiment of the system of the present invention; and

FIG. 2 is a flow chart illustrating the steps of the method of the present invention in which a subscriber retrieves voice mail messages from two voice mail systems with a single phone call.

#### **DETAILED DESCRIPTION OF EMBODIMENTS**

FIG. 1 is a simplified block diagram of the preferred embodiment of the system of the present invention. An office private branch exchange (PBX) 11 is shown serving a plurality of extensions 12. The office PBX is also connected to a primary voice mail system (VMS) 13 which provides voice mail services to the subscribers utilizing the plurality of extensions. The office PBX is also connected through an outside telephone line 14 to the Public Land Mobile Network (PLMN) 15 and the Public Switched Telephone Network (PSTN) 16. The outside line 14 may be a landline to the PSTN or, in the case where the office installation is a fixed cellular

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installation, the outside line may be a radio channel to the PLMN. The subscriber also utilizes at least one secondary VMS 17 which may be associated with the subscriber's mobile phone, or may be associated with another landline telephone utilized by the subscriber. Thus, the secondary VMS may be accessed either through the PLMN or  
5 through the PSTN.

The primary VMS 13 includes a message playback unit 9 and a subscriber profile 18 in which information about the subscriber is stored. The subscriber profile is typically set up when the subscriber first joins the office, and does not require further input unless some of the subscriber information changes, or if some optional  
10 subscriber information becomes available at a later date. The subscriber profile may include a subscriber identification (ID) number, an extension number, a personal identification number (PIN) for security, and optional information such as the telephone number of each secondary VMS 17 that the subscriber has defined in the system. The primary VMS also includes a menu generator 19 which provides a menu  
15 of subscriber options to the subscriber when the subscriber accesses the primary VMS. The main option menu may include, for example:

- 1 - Listen to Messages;
- 2 - Send a Message;
- 3 - Divert to Secondary Voice Mail System;
- 20 5 - Call Another Extension;
- 6 - Send Message to Another Extension;
- 9 - Change Greeting, Name Announcement, or Profile; and
- \* - Disconnect.

The preferred embodiment of the present invention adds a sub-option under the  
25 Change Profile branch of the options menu which enables the subscriber to store the telephone number of the secondary VMS(s). Thereafter, whenever the subscriber selects "Divert to Secondary Voice Mail System" in the main option menu, the VMS retrieves the telephone number of the secondary VMS; seizes an outside line, and utilizes an auto-dialer 20 to dial the telephone number of the secondary VMS.

30 FIG. 2 is a flow chart illustrating the steps of the method of the present invention in which a subscriber retrieves voice mail messages from two voice mail

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systems with a single phone call. With reference to FIGS. 1 and 2, the steps of the method will be described. At step 21, an incoming call from the subscriber is received in the primary VMS 13. The primary VMS then utilizes the menu generator 19 to provide an option menu to the subscriber at step 22. At step 23, the subscriber selects  
5 "Listen to Messages" from the menu, and the message playback unit 9 plays the messages stored in the primary VMS for the subscriber at 24. At step 25, the primary VMS once again provides the option menu to the subscriber. At step 26, the subscriber selects the new option "Divert to Secondary Voice Mail System".

The selection of "Divert to Secondary Voice Mail System" by the subscriber  
10 at step 26 causes the primary VMS to retrieve the telephone number of the secondary VMS 17 from the subscriber profile at step 27. If multiple secondary VMSs are defined, the primary VMS retrieves the telephone number for the first secondary VMS. If there is no secondary VMS number stored, the primary VMS informs the subscriber of this fact and queries the subscriber to enter the telephone number of the secondary  
15 VMS. If the subscriber enters a number, the primary VMS determines whether or not the number is a valid telephone number, and stores the number in the subscriber profile 18 for future use. At step 28, the VMS then seizes the outside line 14 and utilizes the auto-dialer 20 to auto-dial the telephone number of the secondary VMS. The secondary VMS receives the call at step 29 and provides an option menu to the  
20 subscriber. At step 30, the subscriber selects "Listen to Messages", and at 31, the secondary VMS plays any stored messages for the subscriber. After this, the subscriber may choose to delete or save messages, or the subscriber may simply hang up, and the call is disconnected from the secondary VMS and the primary VMS.

For the sake of completeness, FIG. 2 illustrates that the secondary VMS once  
25 again provides the subscriber with the option menu at step 32, and the subscriber selects "Disconnect" at 33. The call is then disconnected at the secondary VMS at step 34. At step 35, the primary VMS determines whether or not telephone numbers for additional secondary VMSs are stored in the subscriber profile. Alternatively, the primary VMS queries the subscriber to indicate whether or not there are additional  
30 secondary VMSs to be contacted. If not, the process moves to step 36 where the call is disconnected at the primary VMS, and the method is completed. However, if there

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are more secondary VMSs, the process moves to step 37 where the primary VMS obtains the telephone number of the next defined secondary VMS from the subscriber profile or the subscriber. The process then repeats steps 28-35 for each defined secondary VMS.

5           Although the preferred embodiment disclosed herein has described a primary VMS which automatically calls at least one secondary VMS when prompted by the subscriber, it should be recognized that the present invention also includes a VMS which automatically calls any telephone number which is defined in its database or is entered by the subscriber.

10           It is thus believed that the operation and construction of the present invention will be apparent from the foregoing description. While the method, apparatus and system shown and described has been characterized as being preferred, it will be readily apparent that various changes and modifications could be made therein without departing from the scope of the invention as defined in the following claims.

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**WHAT IS CLAIMED IS:**

1. A system in a telecommunications network for retrieving voice mail messages from a primary voice mail system (VMS) and a secondary VMS with a single phone call, said system comprising:
  - a primary VMS comprising:
    - a database of information for a subscriber, said database including a telephone number for a secondary VMS;
    - a menu generator for offering options to the subscriber and receiving subscriber selections;
    - message playback means for playing messages stored in the primary VMS for the subscriber in response to the subscriber selecting to listen to messages; and
    - an auto-dialer for automatically seizing an outside telephone line and dialing the telephone number for the secondary VMS in response to the subscriber selecting to divert to the secondary VMS; and
    - a secondary VMS for playing messages stored in the secondary VMS for the subscriber upon receiving the call from the primary VMS.
2. The system for retrieving voice mail messages of claim 1 wherein the outside line is a radio channel, and the auto-dialer includes means for seizing the radio channel and dialing the telephone number for the secondary VMS.
3. The system for retrieving voice mail messages of claim 1 wherein the outside line is a landline, and the auto-dialer includes means for seizing the landline and dialing the telephone number for the secondary VMS.
4. A system in a telecommunications network for retrieving voice mail messages from a primary voice mail system (VMS) and a secondary VMS with a single phone call, said system comprising:
  - a primary VMS comprising:



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a menu generator for offering options to a subscriber and receiving subscriber selections;

message playback means for playing messages stored in the primary VMS for the subscriber in response to the subscriber selecting to listen to messages;

5 means for requesting from the subscriber, a telephone number for a secondary VMS, in response to the subscriber selecting to divert to the secondary VMS; and

an auto-dialer for automatically seizing an outside telephone line and dialing the telephone number for the secondary VMS in response to the subscriber  
10 entering the telephone number for the secondary VMS; and

a secondary VMS for playing messages stored in the secondary VMS for the subscriber upon receiving the call from the primary VMS.

5. A method in a telecommunications network of retrieving voice mail  
15 messages from a primary voice mail system (VMS) and at least one secondary VMS with a single message-retrieving phone call from a subscriber, said method comprising the steps of:

receiving the phone call from the subscriber in the primary VMS;  
playing messages stored in the primary VMS for the subscriber;  
20 automatically forwarding the call to the secondary VMS; and  
playing messages stored in the secondary VMS for the subscriber.

6. The method of retrieving voice mail messages of claim 5 further  
comprising storing a telephone number for the secondary VMS in a subscriber  
25 database in the primary VMS.

7. The method of retrieving voice mail messages of claim 6 wherein the  
step of automatically forwarding the call to the secondary VMS includes the steps of:  
retrieving by the primary VMS, the stored telephone number for the secondary  
30 VMS; and

automatically seizing an outside telephone line by the primary VMS, and

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dialing the telephone number for the secondary VMS.

8. The method of retrieving voice mail messages of claim 7 further comprising, after the step of playing messages stored in the primary VMS for the subscriber, the steps of:

providing by the primary VMS, a menu of options to the subscriber; and  
receiving by the primary VMS, a subscriber selection to divert to the secondary VMS.

9. The method of retrieving voice mail messages of claim 8 further comprising, after the step of receiving the phone call from the subscriber in the primary VMS, the steps of:

providing by the primary VMS, the menu of options to the subscriber; and  
receiving by the primary VMS, a subscriber selection to listen to messages.

10. The method of retrieving voice mail messages of claim 9 further comprising, after the step of automatically forwarding the call to the secondary VMS, the steps of:

receiving the call from the primary VMS in the secondary VMS;  
providing by the secondary VMS, a menu of options to the subscriber; and  
receiving by the secondary VMS, a subscriber selection to listen to messages.

11. The method of retrieving voice mail messages of claim 5 further comprising, after the step of playing messages stored in the primary VMS for the subscriber, the steps of:

providing by the primary VMS, a menu of options to the subscriber;  
receiving by the primary VMS, a subscriber selection to divert to the secondary VMS; and  
requesting the subscriber to enter a telephone number for the secondary VMS.

12. The method of retrieving voice mail messages of claim 11 further

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comprising, after the step of requesting the subscriber to enter a telephone number for the secondary VMS, the steps of:

determining whether the subscriber entered a valid telephone number; and  
storing the telephone number in a subscriber database in the primary VMS.

5

13. The method of retrieving voice mail messages of claim 5 further comprising storing a plurality of telephone numbers for a plurality of secondary VMSs defined in a subscriber database in the primary VMS.

10

14. The method of retrieving voice mail messages of claim 13 wherein the step of automatically forwarding the call to the secondary VMS includes the steps of:

retrieving by the primary VMS, a stored telephone number for a first defined secondary VMS; and

15

automatically seizing an outside telephone line by the primary VMS, and  
dialing the telephone number for the first defined secondary VMS.

15. The method of retrieving voice mail messages of claim 14 further comprising, after the step of playing messages stored in the secondary VMS for the subscriber, the steps of:

20

determining whether additional secondary VMSs are defined in the subscriber profile;

retrieving by the primary VMS, a stored telephone number for a next defined secondary VMS, upon determining that additional secondary VMSs are defined in the subscriber profile; and

25

automatically seizing an outside telephone line by the primary VMS, and  
dialing the telephone number for the next defined secondary VMS.

16. A voice mail system (VMS) in a telecommunications network, said VMS comprising:

30

a database of information for a subscriber, said database including a stored telephone number;

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a menu generator for offering options to the subscriber and receiving subscriber selections;

message playback means for playing messages stored in the primary VMS for the subscriber in response to the subscriber selecting to listen to messages; and

5 an auto-dialer for automatically seizing an outside telephone line and dialing the stored telephone number in response to receiving a selection from the subscriber to call the stored telephone number.

10 17. The voice mail system (VMS) of claim 16 wherein the stored telephone number is for a second VMS, and the auto-dialer automatically seizes an outside telephone line and dials the telephone number for the second VMS in response to the subscriber selecting to divert to the second VMS.

15 18. The voice mail system (VMS) of claim 16 wherein the database of information for a subscriber includes a plurality of stored telephone numbers, and the an auto-dialer includes means for sequentially calling each of the stored telephone numbers.

20 19. The voice mail system (VMS) of claim 18 wherein the plurality of stored telephone numbers are for a plurality of secondary VMSs, and the auto-dialer includes means for sequentially calling each of the secondary VMSs for retrieval of messages stored therein, in response to the subscriber selecting to divert to a secondary VMS.

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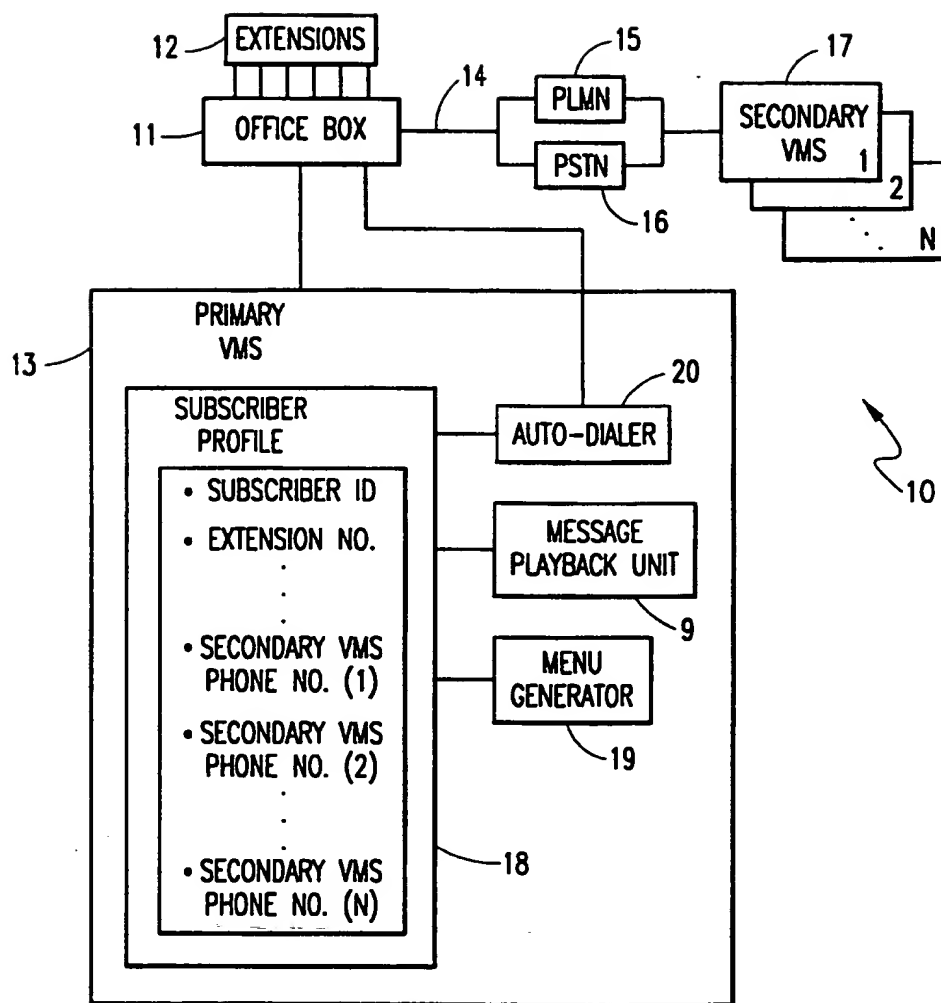


FIG. 1

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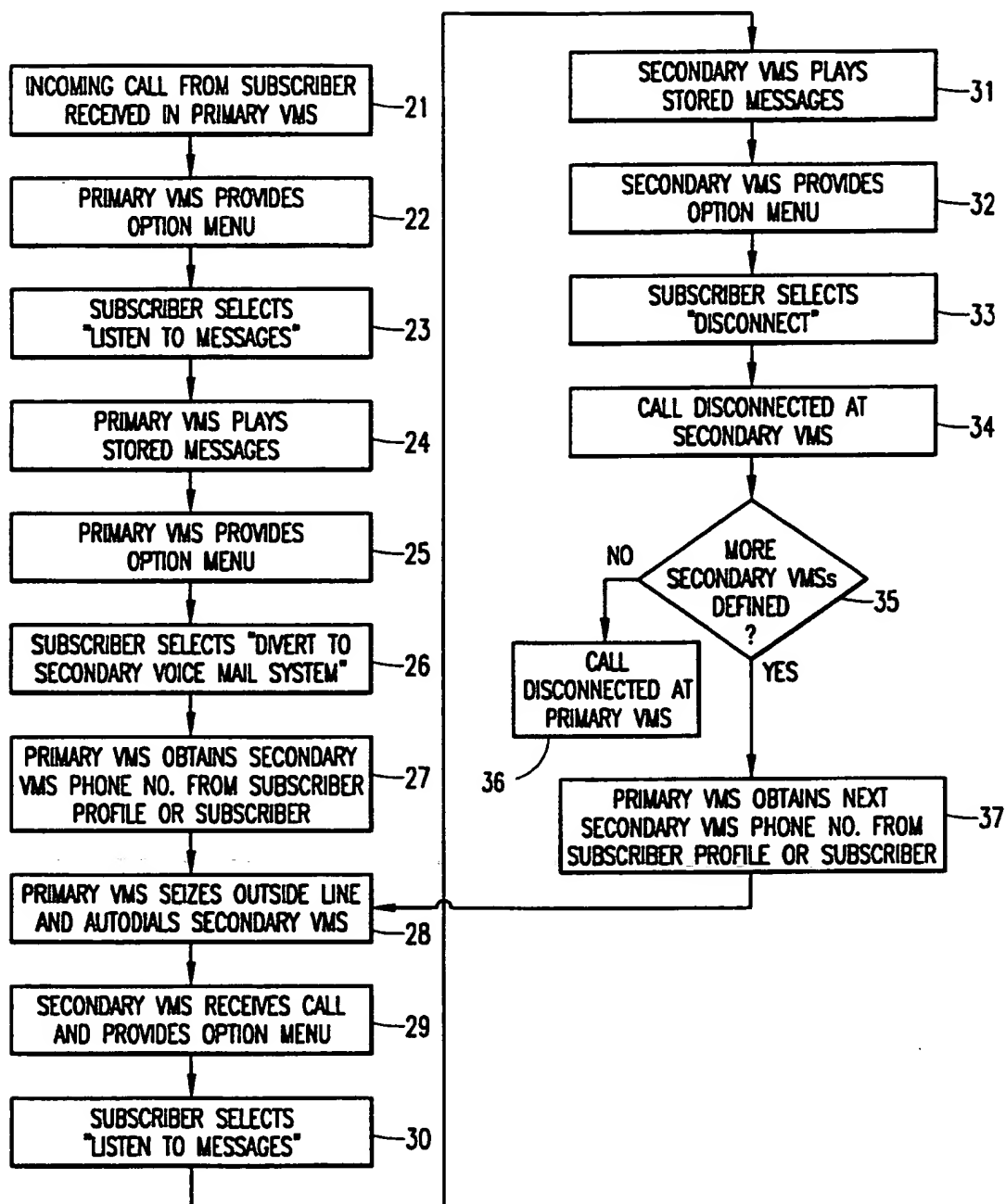


FIG. 2

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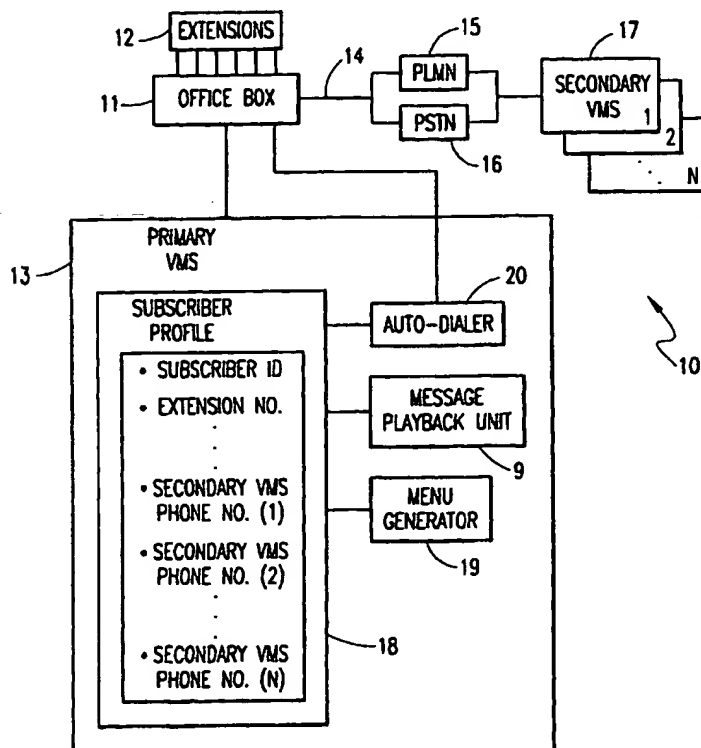
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(54) Title: **SYSTEM AND METHOD OF RETRIEVING VOICE MAIL MESSAGES IN A TELECOMMUNICATIONS NETWORK**



(57) Abstract: A system and method of retrieving voice mail messages from a primary VMS (13) and at least one secondary VMS (17) with a single phone call from a subscriber. A telephone number for the secondary VMS is stored in a subscriber profile (18) in the primary VMS. After the subscriber calls the primary VMS and retrieves messages stored in the primary VMS, the subscriber is presented with an options menu (25) and selects to divert (26) to the secondary VMS. The primary VMS retrieves (27) the stored telephone number for the secondary VMS, automatically seizes (28) an outside telephone line, and auto-dials the telephone number for the secondary VMS. The secondary VMS provides a menu of options (29) to the subscriber. The secondary VMS then receives a subscriber selection (30) to listen to messages, and plays messages (31) stored in the secondary VMS for the subscriber in response to the subscriber selection. If more than one secondary VMS is defined (35) in the subscriber profile, the primary VMS sequentially calls (37) each of the secondary VMSs for retrieval of messages stored therein.

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# INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER  
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## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 866 585 A (SYSTEMS BUSINESS COMM SYSTEMS) 23 September 1998 (1998-09-23) column 3, line 43 -column 6, line 28 column 6, line 48 - line 56 ---	1-19
A	EP 0 831 664 A (SYSTEMS BUSINESS COMM SYSTEMS) 25 March 1998 (1998-03-25) column 2, line 53 -column 5, line 21 ---	1-19
A	EP 0 921 699 A (AT & T WIRELESS SERVICES INC) 9 June 1999 (1999-06-09) column 1, line 37 -column 2, line 46 -----	1-19

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Information on patent family members

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EP 0831664 A	25-03-1998	US 5889839 A	30-03-1999
EP 0921699 A	09-06-1999	NONE	